

Committee: Development Control

Agenda Item

Date: 29 November 2006

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Title: UTT/0717/06/FUL – Climate Change issues

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Item for information

Summary

This report outlines the implications of climate change for the determination of the application. It concludes that:

1. Given the importance of climate change as a global issue and the mounting research evidence to support a policy review, there is a sound case for refusing the changes to conditions sought on climate change grounds until the Government has clarified the position through a thorough, formal process.
2. It is acknowledged that no climate change effect directly linked to additional movements on the existing runway could be demonstrated.

Background Papers

In preparing this report the authors have referred to the following background documents:

Aviation and Global Warming, Department for Transport, January 2004

http://www.dft.gov.uk/stellent/groups/dft_aviation/documents/page/dft_aviation_031850.pdf

Aviation and the Global Atmosphere, Summary for Policy Makers, Intergovernmental Panel on Climate Change, 1999

[http://www.ipcc.ch/pub/av\(E\).pdf](http://www.ipcc.ch/pub/av(E).pdf)

Decarbonising the UK, Energy for a Climate Conscious Future, Tyndall Centre for Climate Change Research, UEA, 2005

http://www.tyndall.ac.uk/media/news/tyndall_decarbonising_the_uk.pdf

Emissions of carbon dioxide for local authority areas, Defra, October 2005

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<http://www.defra.gov.uk/environment/statistics/globalatmos/globalghg.htm>

Predict and Decide, Aviation Climate Change and UK Policy, Environmental Change Institute, University of Oxford, September 2006

<http://www.eci.ox.ac.uk/research/energy/predictanddecide.php>

Climate Change the UK Programme 2006

<http://www.defra.gov.uk/environment/climatechange/uk/ukccp/index.htm>

The Stern Review,

http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

Nottingham Declaration on Climate Change

<http://www.uttlesford.gov.uk/climate+change+and+energy/nottinghamdeclaration.pdf>

Situation

- 1 The relevance of climate change to the current application merits consideration as an overarching issue, as it has potential implications in respect of the need for the development, the economic benefits, health impacts and environmental impacts.

Summary of Published Reports

- 2 The air transport white paper published in December 2003 demonstrably identified the importance of global warming and the significance of emissions from aviation to climate. It was supported by a technical paper published by the Department of Transport in January 2004 Aviation and Global Warming, which took as its starting point the 1999 report of Intergovernmental Panel on Climate Change "Aviation and the Global Atmosphere". The DfT technical paper sought to put its conclusion, that the level of emissions from aviation in 2050 would be substantially higher than at present, in the context of the Energy White Paper commitment from the Government that was putting itself on the path to reducing carbon dioxide emissions by some 60% by 2050, excepting emissions from international aviation, and that the latter would be addressed through the UN body, the ICAO. Subsequent research papers have questioned assumptions made in the DfT technical paper on the grounds that the scope for technological and efficiency gains in the air transport sector is limited. Although detailed technical work was done on the potential climate change implications in preparing the white paper, this now needs to be reviewed. It is acknowledged that the 2003 policy decisions were made in the

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light of forecasts that emissions from aviation would be substantially higher than at present. Extracts are appended to this report.

- 3 The Tyndall Centre report Decarbonising the UK published in 2005 considered five energy system scenarios for the UK in 2050 that would achieve a 'true' 60% carbon dioxide reduction target by 2050, including emissions from international aviation and shipping. They show the extent to which aviation emissions would take up the UK's emissions budget. It says "There are severe implications of permitting even 'moderate' aviation growth for the UK's carbon reduction obligation, with 50% of the 550ppmv emissions subsumed by aviation alone by 2050. Furthermore, if the UK Government follows the scientific consensus that a 450ppmv stabilisation level is required, the aviation sector will exceed the carbon target for all sectors by 2050." The reports states that "the research carried out demonstrates the paradoxical nature of the UK Government's self-imposed 60% carbon reduction target, based essentially on contraction and convergence, and their desire to permit, or indeed promote, the high levels of growth currently experienced in the aviation sector."

- 4 However, the report says that the "Tyndall scenarios clearly illustrate that even a true 60% reduction in the UK's carbon dioxide emissions is technically, socially and economically viable. Consequently, it is within our grasp to reconcile a dynamic and economically successful society with low carbon dioxide emissions." It also states, "Moreover, the Government's own 60% carbon reduction target will be impossible to achieve if aviation growth exceeds just two-thirds of its current rate – even allowing for year-on-year efficiency improvements and assuming all other sectors completely decarbonise." Turning this round, it is not stating that there would have to be no growth in aviation, but there would have to be year on year efficiency improvement and all other sectors would have to be completely decarbonised. Until the Government has responded to Stern, we do not know if this is a reasonable basis on which to proceed. Statements by the Chancellor of the Exchequer and the Secretary of State for the Environment on 31 October when the Stern Review was published outlined the Government's proposals including its proposals for legislation in a Climate Change Bill.

- 5 Predict and Decide, Aviation Climate Change and UK Policy, a report from the Environmental Change Institute, University of Oxford, published in November 2005 makes similar points to the Tyndall Centre report about the respective directions of travel of the Government's carbon reduction targets and its air transport policy. It concludes that "In the light of the evidence about climate change and the UK's environmental goals, the Government will need to explore a policy of managing demand for air travel. This is likely to include:

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- A change in strategic policy to give a presumption against the expansion of UK airport capacity;
- A fiscal package to make flying less attractively priced;
- A communication strategy that builds on existing public support for addressing aviation's environmental impacts and ensures that the contribution of flying to climate change is understood and recognised."

It states on page 23 at paragraph 3.1:

"One of the central tenets of this paper is that demand restraint in the aviation sector is essential, if aspirations to stabilise the UK's contribution to climate change are to be met".

- 6 Defra published in January 2006 a Conference Report of the Scientific Symposium on Stabilisation of Greenhouse Gases held at the Met office in February 2005 Avoiding Dangerous Climate Change. This reported that, compared with the IPCC Third Assessment Report of 2001, "there is greater clarity and reduced uncertainty about the impacts of climate change across a wide range of systems, sectors and societies. In many cases the risks are more serious than previously thought". For example, probability analysis has quantified that limiting warming to 2 degrees C above pre industrial levels with relatively high certainty requires the equivalent concentration of CO₂ to stay below 400 ppm. The symposium determined that emissions must be cut and be on a permanent downward path within 10 years to give a reasonable chance of the world warming less than 2 degrees C, identified as the threshold of 'dangerous' climate change.
- 7 Climate Change the UK Programme 2006 published by the Government mentions aviation but only to say that emissions from aviation are not included in either the Kyoto Protocol target or the domestic carbon dioxide goal and that there is no international agreement yet on allocating these emissions to national greenhouse gas inventories. It repeats the air transport white paper acknowledgement that aviation could amount to about a quarter of the UK's total contribution to global warming by 2030 and that it believes the best way of ensuring that aviation contributes towards climate stabilization is through a well designed emissions trading regime, because "it allows a specific emissions target to be set and achieves that limit in the most cost effective way". There has been some progress towards the government's domestic CO₂ target of 20% reduction compared to 1990 by 2010, but it has been acknowledged in the 2006 Programme that reductions will fall short of the target. Moreover, the Tyndall Centre has determined that if the UK's share of international aviation and shipping is included in emissions figures, no progress at all has been made since 1990.
- 8 It has been reported that aviation will be brought into the EU Emission Trading Scheme from 2011, encompassing all flights to from and with EU countries. However, the EU has acknowledged that it is unlikely to have a strong effect on reducing demand for aviation, which has been identified as essential by the

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University of Oxford and Tyndall Centre Research. Furthermore the four year delay is a matter of concern when the need for immediate action is increasingly clear.

- 9 The Stern Review is a recently published independent report commissioned by the Chancellor of the Exchequer, reporting to both the Chancellor and to the Prime Minister, as a contribution to assessing the evidence and building understanding of the economics of climate change. It first examines the evidence on the economic impacts of climate change itself, and explores the economics of stabilising greenhouse gases in the atmosphere. The second half of the Review considers “the complex policy challenges involved in managing the transition to a low-carbon economy and in ensuring that societies can adapt to the consequences of climate change that can no longer be avoided.”
- 10 It concludes that “the benefits of strong, early action on climate change outweigh the costs. The effects of our actions now on future changes in the climate have long lead times. What we do now can have only a limited effect on the climate over the next 40 or 50 years. On the other hand what we do in the next 10 or 20 years can have a profound effect on the climate in the second half of this century and in the next.” The evidence gathered by the Review leads to a simple conclusion: “the benefits of strong, early action considerably outweigh the costs.”
- 11 “The evidence shows that ignoring climate change will eventually damage economic growth. The scientific evidence points to increasing risks of serious, irreversible impacts from climate change associated with business-as-usual (BAU) paths for emissions. Climate change threatens the basic elements of life for people around the world - access to water, food production, health, and use of land and the environment. The damages from climate change will accelerate as the world gets warmer. Higher temperatures will increase the chance of triggering abrupt and large-scale changes. The impacts of climate change are not evenly distributed – the poorest countries and people will suffer earliest and most. And if and when the damages appear it will be too late to reverse the process. Thus we are forced to look a long way ahead. Emissions have been, and continue to be, driven by economic growth; yet stabilisation of greenhouse-gas concentrations in the atmosphere is feasible and consistent with continued growth.”
- 12 The Stern Review has focused on the feasibility and costs of stabilisation of greenhouse gas concentrations in the atmosphere in the range of 450-550ppm CO₂e. “Stabilising at or below 550ppm CO₂e would require global emissions to peak in the next 10 - 20 years, and then fall at a rate of at least 1 - 3% per year. By 2050, global emissions would need to be around 25% below current levels. These cuts will have to be made in the context of a world economy in 2050 that may be 3 - 4 times larger than today - so emissions per unit of GDP would need to be just one quarter of current levels by 2050. To stabilise at 450ppm CO₂e, without overshooting, global emissions would need

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to peak in the next 10 years and then fall at more than 5% per year, reaching 70% below current levels by 2050.”

Comment

- 13 Until the Government has responded to Stern, and in light of the other evidence showing aviation demand management is a necessity to achieve emission reduction targets, it is uncertain whether the policy of encouraging airport growth as advocated in The Future of Air Transport is a reasonable basis on which to proceed. It is not for the Council in its role as local planning authority to determine whether projected growth in global aviation is incompatible with stabilisation of greenhouse gases at levels that will ensure temperature rise does not exceed 2 degrees C, nor even if growth in UK aviation as planned in government policy is contrary to the UN Framework Convention on Climate Change (UNFCCC), which requires parties to the UNFCCC to limit or reduce emissions from international services working through the International Civil Aviation Organisation (ICAO). Nor, in deciding a planning application, does it need to determine what an appropriate national air transport policy should state. However, the significance of the changes in context over the past three years since The Future of Air Transport was announced puts a question mark over the weight that should be attached to it.
- 14 The Stern Review makes the general observation that it is decisions in the next ten to twenty years that will affect outcomes beyond 2050. The Stern Review's recommendations, and indeed those of the Predict and Decide Report are made in the context of the need for urgent policy review rather than ad hoc decisions against existing policy, but initial Government reaction to the Stern Review appears to be positive.
- 15 Following the Stern Review, mitigating the growth in green house gas emissions by moving to a low carbon economy may well have to involve constraint on rates of growth in aviation. It seems highly likely that the Department for Transport has under estimated the need for aviation to contribute to limiting climate change in the next 10 to 20 years to a greater extent than can be achieved through increased fuel efficiency. The emissions consequences of granting the current planning application and the lifting the conditions on the number of air transport movements might then have to be reversed by the application of economic instruments to manage demand. The new enabling powers in the proposed Climate Change Bill might have to be used to impose other constraints. Plainly, this whole issue needs to be subject of considerable additional policy development.
- 16 The Council also has to consider the specific issue of whether the increase in emissions resulting from the changes to planning conditions sought would be sufficiently damaging to be accorded significant weight. Increased use of

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Stansted's runway is a step in the wrong direction in terms of CO₂ emissions reduction, albeit in a global context a small step. SSE puts the increase at the equivalent of 5MtCO₂ including a Radiative Force Index multiplier of 2.7. BAA has declined to quantify the increase in emissions except in relation to energy use on the airport other than to observe that UK aviation contributes some 0.1% of global CO₂, and the additional aircraft movements resulting from a "Generation 1 consent" would be a small proportion of UK aircraft movements in 2014.

- 17 Not including international aviation and shipping, the CO₂ emissions from Uttlesford, the East of England and the whole of the UK were 1 MtCO₂, 50 MtCO₂ and 568 MtCO₂ respectively in 2003. The effects of the 35 mppa case, at an estimated 5MtCO₂ including radiative forcing effects, therefore represents five times the emissions from Uttlesford, 10% of emissions of the East of England, and almost 1% of emissions of the UK as a whole.
- 18 In isolation, however, the impact on climate change of increasing the number of movements will not be significant in a national or global context. Even when considered on a cumulative basis with other UK or global emissions it is uncertain whether the increment from Stansted would be critical in terms of a 400ppm (high certainty of global mean temperature increase staying below 2 degrees C) 450 ppm (medium certainty) or 550 ppm threshold. Under a business as usual scenario, emissions from Stansted would be a contributory element in total global emissions crossing critical thresholds at some future point, but due to the number and nature of other factors (both positive and negative) and the net balance between them, the link would be too indirect to be a sound basis for concluding that the impact from the current proposals would be cumulatively unacceptable. The Tyndall scenarios demonstrate this.
- 19 Some explanation is probably appropriate as to why increased energy efficiency in buildings, and reduced use of the car are important if it cannot be demonstrated that 5 million tonnes of additional CO₂ from aircraft using Stansted (including the radiative forcing effects) would result in any climate change effect. Domestic consumption of energy and road traffic are substantial causes of emissions, with households accounting for 25% and road transport 21% compared to aviation at 6%. Households, in particular, have been identified as a potential early win because of the significant savings that could be achieved at limited cost.

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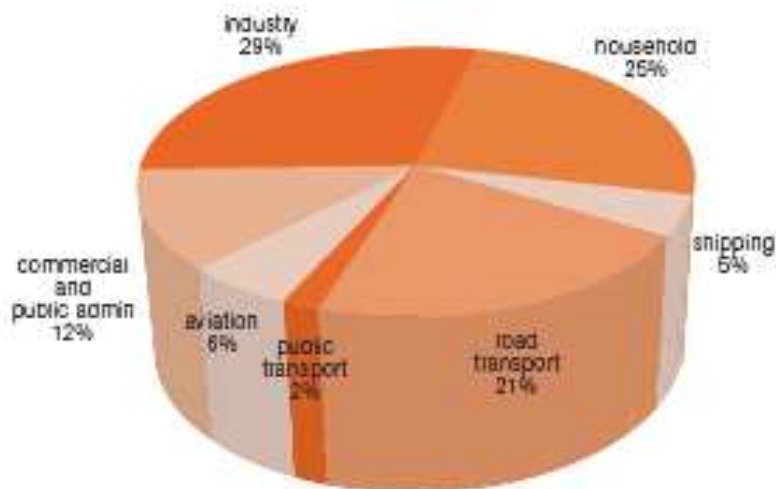


Figure 19
Sectoral split of carbon emissions
for Today

Total UK emissions – 165MtC (605Mt CO₂)

Source: Tyndall Centre report Decarbonising the UK – Energy for a Climate Conscious Future

The Government's policy is that the planning system has a role to play in securing greater energy efficiency in buildings and minimizing emissions by securing a pattern of development that reduces the need to travel and encourages use of non car modes. This is set out in the UK Climate Change Programme 2006 and the recent Local Government White Paper Strong and Prosperous Communities.

- 20 The Nottingham Declaration is a commitment to partnership between local and central government to work together on these issues where there is a joint policy approach, such as home energy efficiency, reducing energy costs, reducing congestion, adapting to the impacts of climate change, improving the local environment and dealing with fuel poverty in communities. The Declaration consequently could not be used to justify running contrary to a soundly based, coherent set of national policies. The potentially far reaching implications of the Stern Review, however, mean that it would be unsound to grant consent for increased air transport movements until the Government has addressed this very recent advice and the reports that preceded it.

Conclusions

- 21 Given the importance of climate change as a global issue and the mounting research evidence to support a policy review, there is a sound case for refusing the changes to conditions sought on climate change grounds until the Government has clarified the position through a thorough formal process.

- 22 It is acknowledged that no climate change effect directly linked to additional movements on the existing runway could be demonstrated.